

ERDC

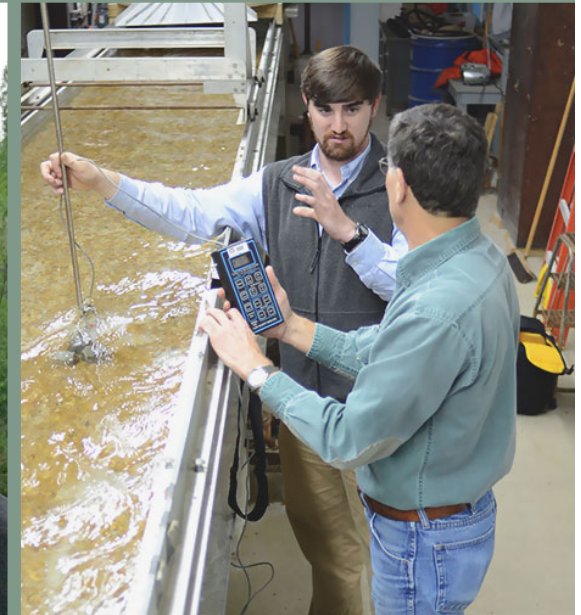
Engineer Research and
Development Center

CRREL TCE External Review Panel Summary

Jay Clausen and Sally Shoop

CRREL Staff Representatives

8 April 2015



US Army Corps
of Engineers®

Agenda

- **Introductions**
- **Panel Directives**
 - ▶ Panel Objectives
 - ▶ Panel Review Members
 - ▶ TCE Vapor Intrusion (VI) Project Delivery Team
- **Panel Process**
 - ▶ Meeting Procedures
 - ▶ Topics Presented
- **Panel Recommendations Moving Forward**
 - ▶ Communication
 - ▶ Human Health Effects
 - ▶ VI Pathway Investigation
 - ▶ Project Team Organization
 - ▶ Conceptual Site Model
- **Q & A**



Introductions

- Welcome
- Thank you
- Staff Representatives
 - ▶ Jay Clausen
 - ▶ Sally Shoop



Panel Directives

Panel Objectives

- Review past and current efforts related to TCE Vapor Intrusion (VI) activities at CRREL
- Assess whether technical approaches, methods, and plans are appropriate
- Determine if the project is on the correct technical course of mitigating ongoing VI issues at CRREL



Panel Directives

Panel Review Members

- Dr. Paul Johnson, Geohydrology & TCE VI (Arizona State Univ)
- David Folkes, Principal, Vapor Intrusion, (Geosyntec)
- Anita Meyer, Toxicology, Risk Assessor (USACE EMCX)
- Dr. Joseph Kreitinger, Environmental Toxicologist (ERDC-EL)
- Dr. David Gent, Research Environmental Engineer (ERDC-EL)
- Dr. J. Keith Tolson, Principal Toxicologist (Geosyntec)
- Dr. Donna Vorhees, Human and Ecological Risk, (Science Collaborative)
- Robin Mongeon, Hazardous Waste Remediation Bureau, Regulator (NH DES)
- Kenneth Richards, Project Manager, Regulator, Geologist (NH DES)



Panel Directives

TCE VI Project Delivery Team (PDT)

- ERDC
- CRREL
- NAE (New England District) and contractors
- US Army Environmental Command (USAEC)
- US Army Public Health Command (USPHC)
- NH Department of Environmental Services (DES)



Panel Process

- TCE VI Review Panel convenes at CRREL 10-12 February 2015
- CRREL “Administrative Record” review
- Daily agenda items included
 - Presentations by USACE New England District and their contractors
 - Open discussion
 - Review of employee concerns
 - Site walk
- Recommendations were relayed to the ERDC-CRREL management



TCE VI Review Panel Conclusion

- Efforts to safeguard the health and safety of all Hanover employees have been the top priority
- The decisions and VI investigation processes conducted thus far by NAE and their contractors are technically sound
- There is a need for significant improvement in communication transparency and open dialog with Hanover staff



Panel Recommendations to Management

Five Themes:

- Communication
- Human Health Effects from TCE VI Exposure
- VI Pathway Investigation
- Project Team Organization
- Conceptual Site Model

Memorandum of Record to Dr. Davis and Dr. Hansen, 3 April 2015



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Communication

- Initiate a health risk communication discussion with Hanover employees to include the participation of a medical doctor and a health risk communication specialist
- Establish an Installation Restoration Program Manager at CRREL
- Develop a written policy for TCE VI data dissemination
- Reorganization of information on Share Point and public website
- Development of slides for TCE VI Open Forums and continuous archive management on Share Point and public website
- Document TCE VI PDT biweekly calls by progress tracking site
- Collaboration and execution with CRREL and NAE for development of a risk communication plan



Human Health Effects from TCE: Vapor Exposure

- Provide presentation of Health Quotient (HQ) calculations, action levels and decision tree
- Conduct a long term detailed Healthmate (air purifier) effectiveness study
- Conduct a longer term metric for decommissioning Healthmates
- Partner with appropriate public health agency on a health study
- Provide TCE history and VI summary to all new employees
- Initiate a health risk communication discussion for CRREL employees with the participation of a medical doctor and a health risk communication specialist



Human Health Effects from TCE: Routine Vapor Monitoring

- Continue to monitor the Child Development Center indoor and outdoor/playground air a minimum of once per month
- Review and disseminate a written strategy for routine VI monitoring
- Provide routine summary updates of the periodic indoor air monitoring activities



VI Pathway Investigation

- Generate written strategic plan for VI pathway investigation sampling activities
- Conduct hypothesis based studies to identify possible sources of VI
- Develop policy for data dissemination



TCE Project Team Organization

- Establish Installation Restoration Program Manager at CRREL
- Expand project team management and capabilities
 - ▶ Resources
 - ▶ Manpower



Conceptual Site Model (CSM)

- Review and update a graphical and written site-wide CSM
- Development of a vapor intrusion, building specific CSM
- Use consistent and specific use of terminology



Conclusion

- ***The overall consensus of the Panel is that the current path of VI investigation conducted by NAE and their contractors is on target and that every effort has been made to safeguard the health and safety of Hanover employees.***
- Summary and recommendations from the panel are detailed and provided to CRREL management for action



Questions



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